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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/568,260

08/11/2006

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9405-3

9679

20792 7590 11/04/2008
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EXAMINER

BERHANU, SAMUEL

ART UNIT

PAPER NUMBER

2838

MAIL DATE

DELIVERY MODE

11/04/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/568,260	Applicant(s) AL-ANBUKY ET AL.	
	Examiner SAMUEL BERHANU	Art Unit 2838	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 October 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 February 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>06/05/2008 and 02/13/2006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-2 and 5-7 are rejected under 35 U.S.C. 102(b) as being anticipated by Arai et. al. (US 2003/0210056) (hereinafter Arai).

As to Claim 1, Arai discloses in Figure 1, and paragraph 0022, a method for determining polarisation of an electrode of a VRLA battery, the method including the steps of: allowing the battery to discharge for a selected period of time (discharge current for a predetermined time), monitoring the battery voltage during the selected period (detecting terminal voltage a predetermined time), and from the change in voltage over the selected period, determining the polarisation of the electrode (detecting the saturation polarization the basis of discharge current and terminal voltage, see also paragraph 0016 and 0022).

As to Claim 2, Arai discloses in Figure 1, detecting the magnitude of the change in voltage to determine the polarisation of the electrode.

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As to Claim 5, Arai discloses in Figure 1, a method as claimed in claim 1 wherein the step of discharging comprises open circuit charge leakage.

As to Claim 6, Arai discloses in Figure 1, wherein the step of discharging comprises closed circuit enforced discharging.

As to Claim 7, Arai discloses in Figure 1, wherein the step of discharging occurs as part of a current perturbation applied to the battery.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 3-4 and 8-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arai in view of Finger (US 2002/0060555).

As to Claim 3, Arai discloses in Figures 1-5, all of the claim limitations except, including the step of detecting a first change in battery voltage and a subsequent second change in battery voltage, and associating the first change with polarisation of a negative electrode and the second change with polarisation of a positive electrode.

Finger discloses in Figures 1-15, , including the step of detecting a first change in battery voltage and a subsequent second change in battery voltage, and associating the first change with polarisation of a negative electrode and the

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second change with polarisation of a positive electrode (see paragraph 0015 and paragraph 0032)

It would have been obvious to a person having ordinary skill in the art at the time of the invention was made to add electrode voltage changes in the determination of polarization of electrodes as taught by Finger in Arai's apparatus since the method of Finger allowed charge restoration without taking batteries off-line (see paragraph 0010) and also charge restoration based on estimated battery plate deterioration and based on battery state of health.

As to Claim 4, Arai in combination with Finger discloses the polarisation of at least one electrode with an expected polarisation value or range of polarisation values to determine parameters of a float charge to be applied to the battery.

As to Claim 8, Finger discloses in paragraph 0031, wherein the polarisation of the negative electrode is determined.

As to Claim 9, Arai discloses in Figures 1-5, the step of using the difference between the battery voltage prior to discharge and the polarisation detected to determine the polarisation of the other electrode (paragraphs 0031, 0035).

As to Claim 10, Arai discloses in Figures 1-5, a method of providing a float charge to a VRLA battery, the method including the steps of: allowing the battery to discharge for a selected period of time (see paragraph 0015 and paragraph 0032 paragraphs, monitoring the battery voltage during the selected period)

Arai does not disclose explicitly applying a float charge to the battery dependent on the change in battery voltage over the selected period.

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Finger discloses in Figure 12 applying float charge to the battery, float charge to the battery dependent on the change in battery voltage over the selected period

A to Claim 11, Arai in view of Finger discloses wherein the step of discharging comprises open circuit charge leakage.

A to Claim 12, Arai in view of Finger discloses step of discharging comprises closed circuit enforced discharging.

5. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Finger in view of Suzuki et. al. (US 4,331,699) (hereinafter Suzuki), and further in view of Bushong et. al. (US 2004/0101747) (hereinafter Bushong)

As to Claim 13, Finger discloses in Figures 1-15, a float charge to a VRLA cell (see paragraph 0017), the method including the steps of: determining the resistance (see paragraph 0015) for the cell and applying a voltage to the cell electrodes dependent on the determined equivalent resistance (see paragraph 0052).

Bushong discloses in Claim 50, charging a cell based on resistance

Finger discloses using Tafel slope to determine equivalent resistance

It would have been obvious to a person having ordinary skill in the art at the time of the invention to use Tafel resistance for cell resistance determination as taught by Bushong and Suzuki in Finger's apparatus in order to provide appropriate charging power to the cell to avoid cell damage due to over-charging and over-discharging.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SAMUEL BERHANU whose telephone number is (571)272-8430. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Akm Ullah can be reached on 571-272-2361. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Akm Enayet Ullah/
Supervisory Patent Examiner, Art
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/S. B./
Examiner, Art Unit 2838